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## Notes on two North American ferns

MARGARET SLOSSON

(WITH PLATE 7)

The smallest species of the ferns found in the United States, the minute filmy fern *Trichomanes Petersii*, has been supposed not to occur elsewhere. Originally discovered in Hancock county, Alabama, not far from the Sipsey River, its range is cited in Christensen's Index Filicum as Alabama, Mississippi and Georgia. Specimens from these states are in the Underwood Herbarium at the New York Botanical Garden. Chapman, in all three editions of his Flora, reports it as having been sent him among mosses from Pensacola, Florida, but apparently no specimens can be found to substantiate this statement. A letter in the Underwood Herbarium, written in reference to this by Mr. C. D. Beadle in 1902, states that on examining the material of *T. Petersii* in the Biltmore collection in North Carolina, which contains the Chapman Herbarium, he finds it is all from the counties of Winston and Etowah in Alabama, with the exception of a single specimen collected by M. A. Curtis, without locality or date cited. Mr. Curtis is not living and it is not likely that any information about his specimen is to be had. It is possible that young specimens of the West Indian *Trichomanes punctatum*, which does occur in Florida,<sup>1</sup> may have been mistaken by Chapman for *T. Petersii*. However that may be, it would be interesting to know the facts of the case, for many species known to the West Indies find a foothold in Florida, and *T. Petersii* must now be credited to Santo Domingo! A small specimen is in the Underwood Herbarium, consisting of a rhizome with four fertile fronds, found tangled in a mat of *T. hymenoides*, collected in woods near Constanza, Santo Domingo, at an altitude of 1,260 meters, March, 1910, by H. von

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<sup>1</sup> Specimens of this species from Florida are in the Underwood Herbarium, collected in hammocks near the Homestead Road, between Cutler and Longview Camp, *Small & Carter 1478*, and there are also specimens of another West Indian *Trichomanes*, *T. Krausii*, collected partly in the same locality, *Small & Carter 1479*, and partly in hammocks near the Hempstead Trail, near Camp Longview, *Small & Carter 1500*.

Türckheim (*no.* 3066). This specimen is figured on PLATE 7, FIGS. 2 and 4. It agrees exactly in character with the United States plant (FIG. 3). No differences are to be found in the venation, size of the cells and thickness of the cell-walls of the laminae and of the lips of the involucre, size and character of the spores, trichomes of the margins of the laminae, etc.

This is not the first instance of species known to the United States occurring on the high mountains of Santo Domingo. Dr. I. Urban<sup>1</sup> has recently cited some six or seven species, at least three of which, *Chimaphila umbellata* (L.) Nutt., *Sphenopholis obtusata* (Michx.) Scrib., and *Agrostis perennans* (Walt.) Tuckerm., are to be found in the vicinity of New York City! One is a fern, *Pellaea ternifolia* (Cav.) Link, which, however, ranges from Chile to Texas.

A new fern species has been unexpectedly added to the flora of the United States lately by the discovery of Dr. Rydberg and Professor Garrett, while collecting plants in Utah in the summer of 1911, of two small colonies of maidenhair, fast in the cracks of the wall of the Armstrong Cañon. The plants were found on the north side of a small branch of the cañon, near the Edwin Bridge. The two colonies grew in partial shade, less than a hundred yards apart, both imbedded in horizontal crevices of sandstone, under overhanging rocks.

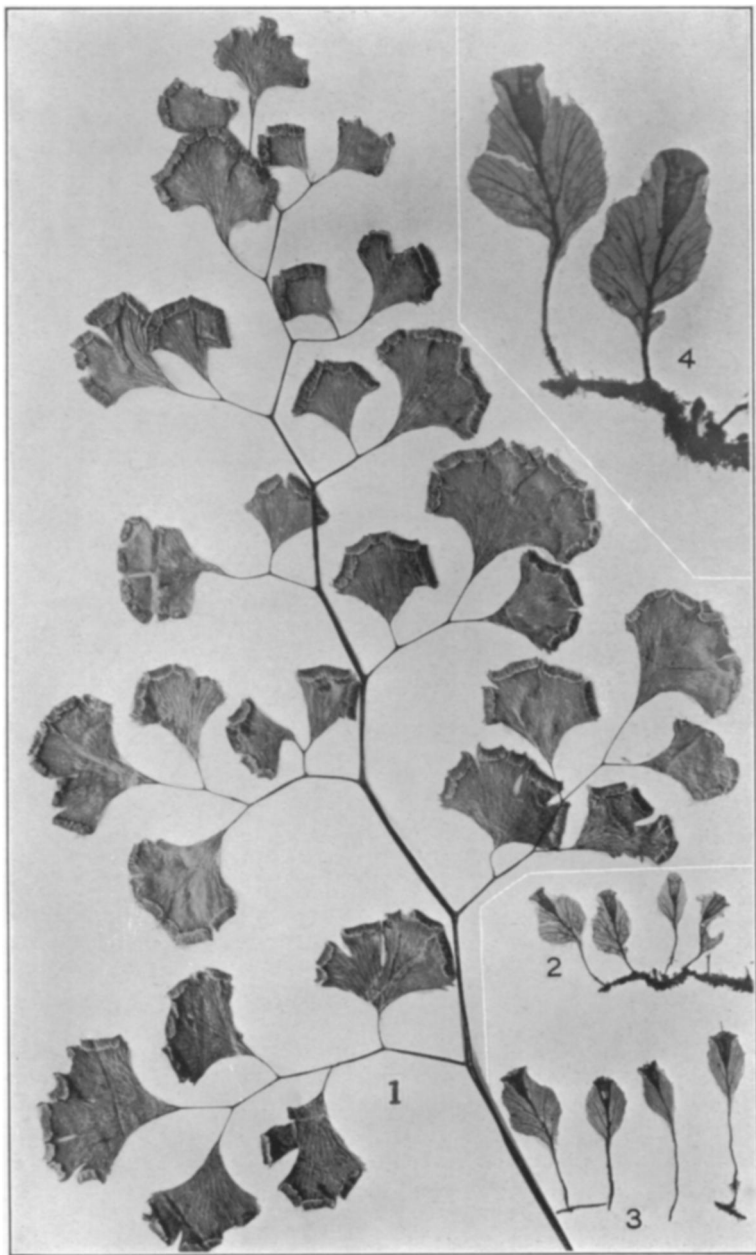
These plants represent an undescribed species, and I am indebted to Dr. Rydberg for the privilege of describing it. It is related to *Adiantum Capillus-Veneris*, but differs in several particulars, noticeably in the flexuose rachises, peculiarly tapering bases of the fertile pinnules, and long heavy indusia. It may be described as follows:

***Adiantum rimicola* Slosson sp. nov.**

Rhizome creeping but often closely branched, thus making the fronds appear tufted, about 2 mm. in diameter, thickly chaffy; scales 4 mm. or less long, dark brown, linear or lanceolate, acuminate, entire or with one or more sharp lobes, long-celled; similar scales on the lower parts of the stipes; plant otherwise glabrous; stipes up to 15.3 cm. long, dark reddish-brown, flattened or somewhat grooved on face, otherwise rounded; laminae up to 17.5 cm. long, up to 12 cm. broad, ovate-deltoid or the smaller ovate-oblong,

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<sup>1</sup> *Symbolae Antillarum* 6: 289. 1909.



1. ADIANTUM RIMICOLA Slosson

2-4. TRICHOMANES PETERSII A. GRAY

broadest at base, bipinnate or rarely tripinnate; pinnae and pinnules alternate, not articulated at base, conspicuously stalked, diverging from the flexuose rachises at an angle of  $45^{\circ}$ – $90^{\circ}$ : basal pinnae with 2–5 divisions, uppermost pinnae often simple; ultimate divisions (pinnules) rather bright often bluish-green, mostly flabelliform from a narrowly cuneate base, the basal sides entire and often unequal, flaring and often recurving, the upper margin broadly rounded or rarely subdeltoid, cleft  $\frac{1}{8}$ – $\frac{1}{3}$  of their depth into 1 or 2 lobes; lobes sometimes entire, usually once or more times slightly notched, between the notches usually completely recurved to form the indusia but when sterile sharply denticulate; sterile pinnules flatter at base, often scarcely cuneate, otherwise similar to the fertile; apical pinnules the largest, up to 2.5 cm. broad and 2 cm. long; veins flabellate-dichotomous, about 5–7 times forked, the basal fork and the outer branches of the second fork often dark brown like the rachis and edging the leaflet's base; texture firm; indusia heavy, up to 8.3 mm. long, subentire or erose; spores verrucose.

Type in the Underwood Herbarium at the New York Botanical Garden, collected in the Armstrong Cañon, in southeastern Utah, altitude 1,600–1,800 meters, August 4–6, 1911, *Rydberg & Garrett 9423*. Represented also by *Rydberg & Garrett 9422*. A fertile frond is shown on PLATE 7, FIG. 1.

#### Explanation of plate 7

FIG. 1. *Adiantum rimicola*; fertile frond, natural size, *Rydberg & Garrett, 9423*.

FIGS. 2–4. *Trichomanes Petersii*; 2, plant from Santo Domingo,  $\times 3\frac{1}{4}$ , *H. von Türckheim 3066* in part; 3, fronds collected near Gadsden, Alabama,  $\times 3\frac{1}{4}$ , *Pollard & Maxon 353*; 4, part of plant from Santo Domingo, much enlarged, *H. von Türckheim 3066* in part.